

THE EFFECTIVENESS OF CULTURALLY-BASED SOCIAL STORIES TO INCREASE APPROPRIATE BEHAVIORS OF CHILDREN WITH DEVELOPMENTAL DELAYS

Ning Hsu

Helen Hammond

Lawrence Ingalls

University of Texas at El Paso

The needs of students from culturally and linguistically diverse (CLD) backgrounds have become a growing concern in United States. As an even greater challenge, educators are looking at effective interventions to provide appropriate education for CLD students with disabilities. The Social Story technique is a practical behavioral intervention which has been regarded as an individualized intervention since the student's needs, background, and learning style should be taken into consideration when using this technique. This research study used an ABA design to compare the modified Social Story technique with and without culturally familiar components. Three students with exceptional needs who came from CLD backgrounds and live in this southwestern city of United States participated in this study. Findings are discussed in relation to study results, limitations, and applications for future research.

The United States is one of the most culturally, ethnically, racially, and linguistically diverse countries in the world (Tepper & Tepper, 2004). Special education teachers and administrators in the United States are mandated to improve services for culturally and linguistically diverse (CLD) students with disabilities (Bakken, O'Brian, & Shelden, 2006; Saracho & Spodek, 2010).

All students have the legal right to be provided with adequate educational opportunities according to the Individuals with Disabilities Education Act (IDEA). However, many CLD students with disabilities still do not receive the quality of appropriate education that they are legally guaranteed (Baca, 2004; Hoover, Klingner, Baca, & Patton, 2007). Students from minority backgrounds and with disabilities frequently experience low expectations and weak instruction (Heubert, 2002; National Research Council, 2002). Researchers have found that CLD students are identified and placed in special education with disproportionate percentages (Gallegos & McCarty, 2000; Osher, Woodruff, & Sims, 2002; Artiles, Rueda, Salazar & Higareda, 2002; Obiakor 2007).

During the past several decades, the number of students from a CLD background has increased in our schools (Santamaria, 2009; Tyler, Yzquierdo, Lopex-Reyna & Flippin, 2004) and the needs of these students, who also exhibit disabilities, are recently receiving increased empirical attention (Klingner, et al., 2005). Although Baca and Cervantes (2004) stated bilingual and multicultural special education programs can benefit CLD students with disabilities, it is difficult for most schools to provide appropriate educational services to this population of students because of the shortage of well-trained teachers.

Multicultural Special Education

Obiakor (2007) stated that under the Individual with Disabilities in Education Act (IDEA), special education programs are intended to provide a free and appropriate public education to all learners including those from CLD backgrounds (Rothstein & Johnson, 2010). The Bilingual Education Act passed in 1968 provides school districts with federal funds to establish educational programs especially for students with limited English speaking ability.

Despite the legal and professional emphasis in multicultural special education, it is clear that many of our programs still do not fully provide social justice, equity, and human dignity to CLD students with

disabilities (Simon, 2001; Ferretti & Eisenman, 2010). When school personnel are unaware of culturally-based differences in students' communication and learning styles, an incompatibility between teaching and learning styles occur (Ingalls, Hammond, Dupoux, & Baeza, 2010). This mismatch may cause students to experience low academic achievement. Erroneous test results and incorrect eligibility decisions may also be a consequence of the incompatibility (Ogata, Sheehey, & Noonan, 2006).

Children from minority backgrounds with disabilities all too often experience inadequate services, low-quality curriculum and instruction (Losen, Orfield, 2002; Baxley & Boston, 2009). Frequently students from CLD backgrounds are also from low SES family incomes. Rueda and Chan (1979) stated that CLD students with disabilities were considered as prone to experience a potential *triple-threat* because of their disability, limited English proficiency, and lower socioeconomic status (Baca, 2004). The needs of CLD students that have disabilities are a growing area of concern, especially as the demographic composition of the nation's public schools continues to change (Artiles, Rueda, Salazar, & Higared, 2002; Gallegos & McCarty, 2000; Guiberson, 2009; Valenzuela, Copeland and Qi, 2006). The need for effective multicultural special education programs is very evident.

The basic principles of an effective multicultural program for special education are for teachers to consider the cultural knowledge of their students, to teach students in their native language, and to build on their cultural and linguistic strengths (Baca, 2004). Ogata, Sheehey and Noonan (2006) stated that students do not respond well to adults who look, speak and behave in a manner quite different from their own experiences. They learn best when they can relate to the individual and the experiences he/she brings and the teacher uses culturally responsive strategies (Baca, 2004; Correa, Hudson, & Hayes, 2004; Cummings, Atkins, Allison, & Cole, 2008; Gallegos & McCarty, 2000; Obiakor, 2007; Tepper & Tepper, 2004).

Klingner & Edward (2006) stated that to determine if a practice is appropriate for CLD students, educators still need more empirical research to show whether specific instructional strategies are effective. The research data should also include information about the CLD students' cultural and language background, language proficiency, life experiences and other related characters (Keogh, Gallimore, & Weisner, 1997).

The Use of the Social Stories Technique with CLD Students With a Disability

Over the past recent years, the Social Stories technique has provided an interesting, age-appropriate instructional strategy for students with autism and moderate disabilities. A variety of research studies have shown that Social Stories are an effective behavioral intervention. This technique prompts and shares meaningful social information with a child (Gray, 2004) with the intent to teach a student the appropriate behavior to display in specific situations (Delano & Snell, 2006; Lorimer, Simpson, Myles, & Ganz, 2002; Quill, 1997; Scattone, Tingstrom, & Wilczynski, 2006; Wissick & Schweder, 2007).

Crozier and Tincani (2005) stated that Social Stories are beneficial for several reasons. First, Social Stories provide a visual stimulus which is applicable to the learning style of students with autism. Second, they can create a friendly effective and unobtrusive learning opportunity which allows the student to practice the skill until they master it (Smith, 2000). Moreover, Soenksen and Alper (2006) considered the intervention of the social story as a technique that can easily be embedded into the normal school environment because reading and listening to stories occurs naturally. Social Stories are written from the student's point of view and conform to the student's cognitive level. This technique is considered to be an effective with students with mild to moderate disabilities and for a wide range of behaviors (Reynhout & Carter, 2006).

Depends on the child's reading ability and needs, social story can be read by the instructor or the child himself/herself (Reynhout & Carter, 2006). Furthermore, peers can read the social story when a certain situation happens to provide a prompt of an appropriate reaction. Careful attention needs to be given to the comprehension level of the target child (Crozier & Tincani, 2005). Social Stories can be illustrated with photographs or pictures to provide visual support to assist the child to understand and gain information of the text (Gray, 2000; Quilty, 2009; Reynhout & Carter, 2006; Salend, (2009); Wissick & Schweder, 2007).

Although the popularity of Social Stories as an intervention for children with autism and mild/moderate disabilities has grown over the years, most of the research is based on single subject designs or a multiple-probe design which has to be repeated in order to establish validity (Sansosti & Powell-Smith,

2006; Reynhout & Carter, 2006). Additionally, there has been minimal research on the use of the social story technique with CLD students with disabilities. Evidence-based research is needed to determine the use of the social story as being beneficial and viable for students with disabilities from diverse backgrounds.

The Purpose of the Study

The purpose of this study was to examine the effectiveness of the intervention of social story in increasing appropriate behaviors of three CLD students with developmental delays. Social Stories with and without culturally familiar components were utilized in the stories to identify whether a multicultural-based social story is more effective than one without cultural elements. Three different culturally familiar components, including illustrations, names, and languages, were added into the multicultural-based Social Stories. From the data collected in this study, researchers were able to: a) determine whether a social story is an effective intervention in increasing appropriate behavior of a child with a developmental delay and who comes from a CLD background and b) substantiate whether the social story becomes more effective for a child from a CLD background when culturally familiar components are added into the story.

Method

Participants and Setting

This study took place in a city in the southwest region of the United States. Individuals from this community primarily come from a Hispanic background. According to the U.S. Census Bureau, 2005-2007 American Community Survey, this community consists of 81.3% individuals from Hispanic backgrounds.

Three Mexican American children, who live within this community, participated in this research for six week period. Two of the participants were preschool-age and one was first-grade age. Each of the children was from CLD backgrounds and was identified as having a developmental delay. More specifically, the three participants were from Hispanic backgrounds and Spanish was their home language. They were, however, capable of communicating using short sentences and vocabulary in English. The three students were nominated by their classroom teachers due to the students' CLD backgrounds and the presence of disruptive behaviors. After the nomination, the researcher completed an interview with the parents to ensure the participants' CLD backgrounds. Furthermore, the parental consent form was provided to parents to explain the study and request them to give permission for their child's participation. Parental permission was granted for the three participants.

Miguel, a 6-year-old boy, attended a first-grade classroom with one teacher and nineteen students without disabilities. He had attended the public school for almost two years. He was diagnosed with Asperger's Syndrome and placed in an English dominate classroom setting that all instructions were given in English. Upon observation, it was noted he was able to finish most in class tasks independently. Miguel's reading level was higher than average for his age. He was able to read at a third-grade level.

Miguel was born in this U.S. city and is the only child in his family. Miguel's parents are fluent in the Spanish language. Miguel understands daily conversation in Spanish, but is now more English dominate since he has participated in the English speaking classroom in the public school setting for almost two years. Although Miguel is capable of meeting educational expectations, he has difficulty in following classroom rules. He needs extra time and redirections to concentrate on the classroom activities, especially during the transition periods of moving from one activity to another.

Jose, a four-year-old boy, attended a self-contained Pre-K special education classroom consisting of one teacher, two assistants, and seven other students with developmental delays. He was diagnosed with a developmental delay, and was placed in the special education classroom due to a speech and language impairment. Although instruction within this program was given in English, the teacher and assistants were able to speak Spanish to him. They translated directions and instructions into Spanish for the students to assist Spanish dominant students in the classroom. Jose has attended this classroom for six months. Upon observation, it was noted that Jose was able to follow the teacher's directions and answer basic questions in English. Jose was also born in this southwestern city in the U.S. He is the youngest child in his family and lives with his parents. His mother is a first generation immigrant from Germany who came to the southwest when she was eight years old. His father is a second generation Mexican American. Both of his parents speak Spanish and English fluently in the home setting. Although Jose's parents are more Spanish dominant, Jose speaks English more than Spanish.

Fabian is a three-year-old boy diagnosed with a developmental delay. He attended a self-contained special education classroom with five other students with developmental delays. Although the classroom instruction was primarily given in English, the teacher translated some directions into Spanish for the children. Fabian had attended this classroom for four months. It was noted he was more Spanish dominant in his expressive language; however, he was still able to follow instructions in English.

Fabian was born in this southwestern community in the U.S. He lives in a single-parent home with his mother where Spanish is the dominant home language. His mother is a second generation Mexican American. Fabian is able to use single vocabulary words in English to answer simple questions. He was able to use short sentences in Spanish to express his needs. During observations, it was noted he needed some extra assistance and directions when the teacher was asking him to finish a task. Occasionally, he refused to follow directions.

This research was conducted in two different classrooms: a Pre-K self-contained special education classroom and a first-grade general education classroom, at three different times of the day. The two classrooms were similar in the types of instruction time provided to the children during the school day. Observation sessions for each participant were held at the same time and same place each day. Only one session per student occurred each day.

Table 1. Participant Demographics

	Participant 1 Miguel	Participant 2 Jose	Participant 3 Fabian
Sex	Male	Male	Male
Age	6 years	4 years	3 years
Placement	General education. Classroom	Special education. classroom	Special education. classroom
Years in school	2 years	6 months	4 months
Home language	Spanish	Spanish	Spanish
Home language	Spanish	Spanish	Spanish

Procedures

Based on the information gathered by observations and interviews, the researcher wrote a personalized social story for each participant. Each social story provided a socially appropriate behavior as a replacement behavior. The social story was written by using the sentence types described by Gray (2000) and adhering to the Basic Social Story Ratio. The social story was typed on white, letter-sized paper and compiled into a book-like format. To help the participants understand the story, each story consisted of a page with one or two sentences and an illustration which matched the content of the social story.

After the Social Stories were written, each story was reviewed by the classroom teacher to check for adherence to Gray's guidelines for the Basic Social Story Ratio. The teacher also re-examined whether the social skills included in the social story were appropriate. Also included in another set of Social Stories were culturally familiar components added to the story. These components were relevant to the child's cultural and linguistic background. The culturally familiar components in the Social Stories were examined by people who are familiar with the participants' cultural and linguistic backgrounds to determine accuracy and appropriateness.

Experimental Design

A single subject ABCB treatments design across participants (Gay, Mill, & Airasian, 2006) was applied. The design across participants is appropriate for this study because it allows a comparison of the

effectiveness of more than one intervention on a single dependent variable and gives additional support for the functional relationship. This phase is a replication phase and helps determine a functional relationship between the independent and dependent variables. An event recording measure was used to collect the frequency of disruptive behaviors of the participants.

Treatment Integrity

Teachers were instructed to read the Social Story to the participant one time per day, four days a week. The Social Stories were read prior to the scheduled activity. A checklist which explained the steps of conducting the intervention was provided to teachers. The teachers were asked to read the Social Story without prompting participants to behave in any way. The observer recorded whether the teacher followed the steps and made notes as to whether the participant answered the comprehension questions correctly or made any comments during the intervention.

Treatment integrity was calculated by determining the percentage of correctly completed intervention steps from the checklist. The checklist included the following instructions for the teachers: a) obtain the participant's attention, b) introduce that you are going to read a social story, c) read the social story and allow the participant to view the illustrations, d) ask the participant basic comprehension questions after the social story is read, e) have participant answer the basic comprehension questions and f) if the participant had difficulty answering the comprehension questions, the answers will need to be explained to the participant to assure the participant is able to answer the questions with a minimum of 80% accuracy.

The teachers were asked to read the social story without explaining the meaning of the social story. After the social story was read, the teacher would give classroom instructions for an activity as usual. No reinforcements or prompts were provided to the participants.

Treatment integrity was 100% for the three participants. Furthermore, Miguel was able to answer the questions at 100% accuracy. Jose was able to answer at 90% accuracy, and Fabian was at 100% accuracy (See Table 2).

Table 2. Checklist For Conducting Social Story Activity and Integrity Levels

	<u>Miguel</u>	<u>Jose</u>	<u>Fabian</u>
Steps:			
1. Get participant's attention			
2. Introduce the Social Story Activity			
3. Read the Social Story/view illustrations			
4. Ask questions/answer questions			
5. Explain the answer if needed			
Integrity Level	100%	100%	100%

Baseline

In the baseline phase of the study, the observer collected data on the participants' target behavior in the classroom activity where the target behavior naturally occurs. There was no social story implemented during this phase. The baseline phase was concluded when a stable pattern of the target behavior was established.

Intervention

The independent variables in this study were the two different interventions (Interventions A and B). The first intervention (A) was a social story without culturally familiar components. The personalized social story was written in English and combined with a Caucasian illustration and characters which did not correspond with the participant's cultural and linguistic background. The second intervention (B) was a social story with culturally familiar components added into the social story. The Caucasian illustration was changed to include characters who were Hispanic. Although the social story was read in the participants' home language of Spanish, the content of the social story remained the same.

In the intervention phases following the baseline phase, the social story was presented to the participant within the whole class setting approximately ten minutes before the classroom activity began. After the

intervention of the social story was completed, the participant and all classmates participated in the scheduled activity. Once the participant began his involvement in the activity, the observer initiated behavior recording of the participant's target behavior.

In the fourth phase of this study, the intervention phase returned to the implementation of one of the two interventions which was the more effective at changing the participant's target behavior. The appropriate social story was read to the participant within the whole class setting and the illustrations were viewed.

Procedures for Data Collection

Based on the topography of the target behavior, event-based methods and time-based methods were conducted to record the frequency or interval of the target behavior. Frequency recording is appropriate to measure a uniform behavior that has a clear beginning in an equal period of time (Umbreit, Ferro, Liaupsin, & Lane, 2007). The observer attended the entire session and recorded the occurrence of the target behavior with tally marks. At the end of the observation, the total number of marks was counted to determine the frequency of the behavior during the session.

Furthermore, the interval recording is an appropriate method to use to collect the latency of the target behavior. The observation period was divided into blocks of time, and the observations were recorded separately for each interval (Umbreit et al., 2007). Partial interval recording was utilized, and the trained observer recorded whether the target behavior occurred at all during the interval. The observer simply circled a + or - for each interval to indicate the occurrence or non-occurrence of the target behavior. When the observation was finished, the observer calculated the percentage of intervals where the target behavior occurred.

The effectiveness of the intervention of the social story was evaluated by measuring the percentage of intervals or the frequency of occurrence of an appropriate target behavior. A socially acceptable behavior was selected by the researcher as the target behavior for each participant. The target behavior for Miguel was set as sitting in his seat during individual work time for a 20 minute period across baseline and intervention phases. The interval recording measure was utilized for this participant. The target behavior for Jose was for him to raise his hand before talking in class. The observation lasted for ten minutes across baseline and intervention phases. The frequency recording was conducted to measure the occurrence of Jose's target behavior. Fabian's target behavior was for him to follow the teacher's directions for completing a task during the specific activity which followed the reading of the social story. The observation also lasted for ten minutes across baseline and intervention phases. The interval recording measure was utilized to measure the target behavior (see Table 3).

Inter-observer Reliability

Two observers were trained by the researcher in conducting data collection procedures. Observer training procedures occurred until the inter-observer agreement reached 80%. Inter-observer agreement was measured during at least 30% of the observation sessions for each participant during the baseline and intervention phases. Percentage of inter-observer agreement was computed by dividing the number of agreements by the total number of agreements and disagreements and multiplying by 100%.

Inter-observer agreement calculations were 35% of the observations for Miguel (four times), 40% of the observations for Jose (seven times), 31% of the observations for Fabian (seven times). For Miguel, the mean level of inter-observer agreement was 98% (range= 96%-100%). The mean level of inter-observer agreement for Jose was 96% (range= 86%-100%), and the mean level for the inter-observer agreement for Fabian was 81% (range= 75%-86%).

Table 3. Definitions of Target Behavior

Dependent Measure	Description
Miguel: To sit at his seat for 20 minutes during individual work times	<p>Instances in which Miguel stays at his seat when the teacher asks him to finish an individual task, such as solving mathematic questions or writing sentences.</p> <p>Example of appropriate behavior:</p> <ul style="list-style-type: none"> ● Sitting on the chair with both feet on the floor. ● Sitting on his chair with legs crossed. ● Kneeling on the chair <p>Example of inappropriate behavior:</p> <ul style="list-style-type: none"> ● Walking around in the classroom. ● Standing up. ● Sitting on the floor without teacher's permission. ● Squatting down beside his chair.
Jose: To raise his hand before talking in class	<p>Instances in which Jose raises his hand before he talks to the teacher during the class activity.</p> <p>Example of appropriate behavior:</p> <ul style="list-style-type: none"> ● Raising hand quietly. <p>Example of inappropriate behavior:</p> <ul style="list-style-type: none"> ● Speaking out. ● Speaking out and raising his hand at the same time ● Physically touching the teacher to get the teacher's attention.
Fabian: Following the teacher's directions to complete a task	<p>Instances in which Fabian pays attention to the teacher and finishes the task given by the teacher during the class activity.</p> <p>Example of appropriate behavior:</p> <ul style="list-style-type: none"> ● Listening to the teacher ● Watching the teacher to demonstrate. ● Doing the work assigned by the teacher. <p>Example of inappropriate behavior:</p> <ul style="list-style-type: none"> ● Talking to other students ● Refusing to follow the direction ● Observing other students or assistant in the classroom.

Results

Each participant's target behavior across baseline and interventions were graphed as a percentage of intervals of the frequency of the target behavior based on the character of the behavior. The interval percentage and frequency of the target behavior across Baseline, Intervention A, Intervention B, and return to Intervention A are presented in Figure 4.1. Additionally, the mean scores for each participant across baseline and intervention phases are presented in Figure 1.

According to the data, the appropriate behaviors for Miguel and Fabian increased after the introduction of the social story. However, the effectiveness of the social story with culturally familiar elements varied. In analyzing the results, the mean score for Miguel during the intervention of the social story with culturally familiar components (Intervention B) is lower than the mean score for the intervention of the social story without cultural components (Intervention A). The mean score for Fabian during Intervention B is higher than the mean score during Intervention A. In addition, Jose's mean scores for Interventions A and B remained unchanged from the Baseline phase.

Miguel. The mean level of target behavior (staying at his seat) for Miguel during baseline was 84.33% (range = 76.5% - 89%) of the interval and 91.8% (range = 72.5% - 100%) during interventions. The percentage of interval of the target behavior during Intervention A is higher than in Intervention B. The mean interval during intervention A was 91.1% and 94.9% which was slightly higher than the interval

mean during intervention B (89.5%). The appropriate behavior of sitting on the chair increased after the Social Story was read to Miguel.

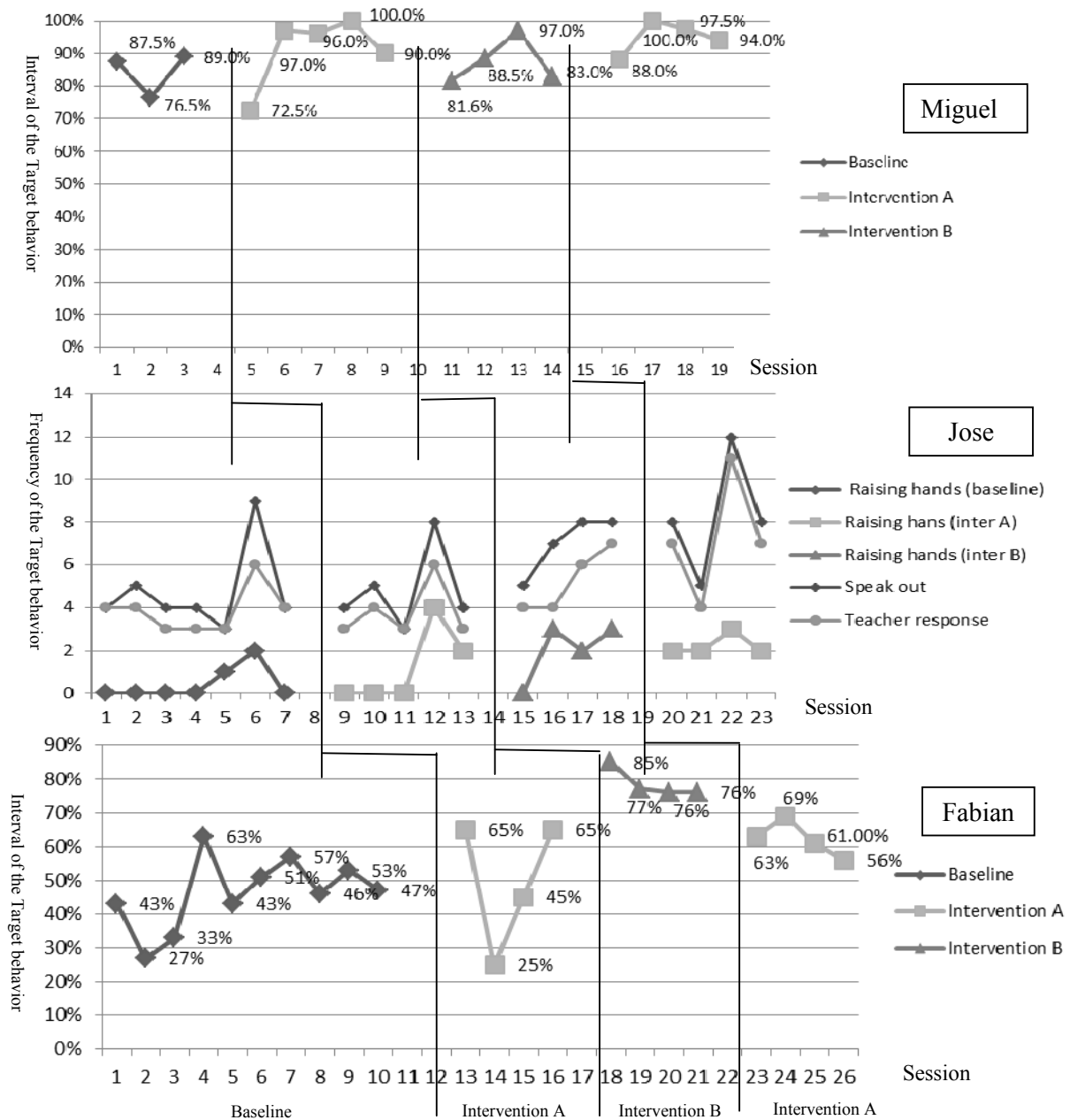


Figure 1.

Table 4. Mean Rates of Each Target Behavior for Each Participant by Phase

Phase	Miguel Interval of Target behavior (%)	Jose Frequency of Target behavior	Fabian Interval of Target behavior (%)
Baseline	84.3%	0	46.3%
Intervention A	91.1%	0	50.0%
Intervention B	89.5%	0	78.5%
Intervention A	94.9%	0.25	62.4%

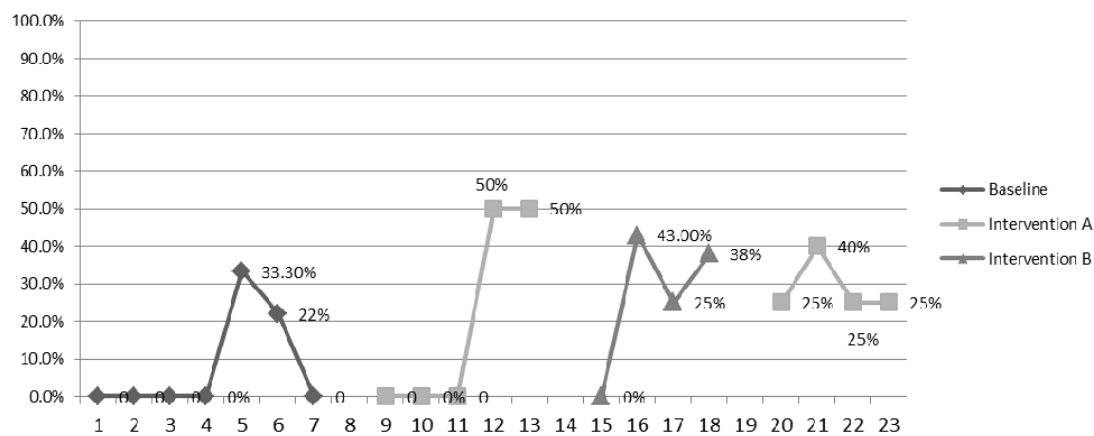
Jose. The frequency of occurrence of the target behavior of raising his hand and waiting to be called on by the teacher did not increase for Jose. The target behavior remained at zero in occurrence. However, it was discovered that the behavior of raising his hand did occur, but the participant spoke out at the same time which conflicted with the target behavior definition. If the behavior of raising his hand counted as exhibiting the target behavior even though the participant also spoke out at the same time, the frequency of target behavior would be different. The total number of occurrences of the revised target behavior increased to three during the baseline, six and nine during Intervention A, and eight during Intervention B. Additionally, the number of teacher-student interactions during the phases was not stable. Jose was more apt to interact with the teacher when he was interested in the activity topic. The percentage of revised target behavior occurrences for Jose is presented in Figure 2.

Table 5. The Mean Percentage of Occurrence of the Revised Target Behavior of Jose

	Baseline	Intervention A	Intervention B	Intervention A
Total frequency of raising hand*	3	6	8	9
Total number of interaction	33	24	28	33
Mean percentage of target behavior **	7.9%	20%	26.5%	28.8%
Mean percentage of Teacher's response to the speak-out behavior	72%	79%	75%	70%

*The revised definition of the target behavior is to raise his hand regardless of waiting quietly or speaking out to get the teacher's attention.

** Percentage of target behavior was computed by dividing the frequency of target behavior by the total frequency of teacher-student interaction

**Figure 2. The Percentage of Revised Target Behavior for Jose**

To ensure the intervention of the social story is the sole independent variable in this study, the teacher was required not to provide any prompts and/or reinforcements to Jose's target behavior of raising his hand. During the baseline and intervention phases, the frequency of teacher response was also recorded during the intervention for Jose.

It was observed that the percentage of revised target behavior did increase. The mean percentage of target behavior was 7.9% during the baseline, and then increases to 20% during intervention A, 26.5% during intervention B, and 28.8% during the reverse intervention A.

Fabian. Fabian demonstrated the largest increase of occurrence of the target behavior during the intervention phases. Fabian's target behavior of following the teacher's directions to complete a task during the observed intervals during baseline was 46.3% (range = 27% - 63%). Throughout Intervention A, the mean score of interval of the target behavior increased to 63.6% (range = 25% - 85%). Furthermore, the mean score of interval during Intervention B increased from 50% to 78.5%. The mean score decreased to 62.4% during the last phase when the intervention returned to Intervention A. For Fabian, the Social Story with the culturally familiar components was more powerful than the Social Story without cultural elements.

Discussion

This research evaluated the effectiveness of the use of the social story intervention to increase target behaviors, such as sitting on a chair during individual work time, raising the hand before talking during class, and following a teacher's directions to complete a task. Overall, the intervention of the social story had a positive influence on increasing the target behaviors. The results of this study is consistent with findings reported by Soenksen and Alper (2006), Sansosti and Powell-smith (2006), and Reynhout and Carter (2007). Following the implementation of the social story intervention, the three participants in this study showed an increase in percentage of exhibiting the appropriate target behavior identified for them. During the course of this study, the researcher found it necessary to revise the target behavior for one of the participants, Jose. The researcher and classroom teacher noted Jose was very young (four years) and had very limited experience in a formalized type of school program (six months). The original target behavior for Jose was a new skill that he had not been exposed to before (such as at home or in a day care). Jose did learn to raise his hand to indicate he wanted to verbally interact, but also began talking without the teacher's permission. This skill for Jose was in the beginning stages of acquisition, therefore, the results of this study showed the Social Story intervention had a positive influence in helping him to develop a new socially appropriate behavior.

The effectiveness of utilizing the culturally-based social story varied. For Miguel, the participant who has attended public school for almost two years, the social story written in English with Caucasian illustrations was more effective at increasing his target behavior than the social story written in Spanish with cultural components. For Jose, who has attended a Pre-K classroom for six months, the cultural components in the social story did not make a significant difference. It was also observed that the target behavior increased as sessions passed, regardless of the presence or absence of cultural components in the Social Stories. For Fabian, the youngest participant who has attended the public school program for only four months, the social story written in Spanish and illustrated with culturally familiar components had a greater positive influence on his target behavior than the social story without the cultural components.

Furthermore, the researcher found that the intervention of social story was beneficial for Miguel to transition from one activity to another. He was able to go to a new activity and concentrate on the tasks after the social story was introduced. The social story provided Miguel with guidelines and expectations to help him to understand the school routine and assist him to transition from one task to another using the social story intervention.

This research is noteworthy for several reasons. First, to date, there is no published research using Social Stories on participants from CLD backgrounds with a disability. The result of this study showed the social story intervention had a positive influence in increasing identified target behaviors of three young children from Hispanic backgrounds. The increase occurred regardless whether cultural elements were added into the social story. Secondly, the results of this study indicated that the positive influence of culturally familiar elements in the social story varied among the three participants. The data appeared to indicate that the longer the participant had attended an English dominant classroom, the less effective the culturally-based social story was. Although the variance in data for the three participants did not clearly

indicate the social story with the cultural elements was the most effective, the students' learning experiences and language proficiency should also be considered as important factors when developing a social story to CLD students.

Several researchers in the literature remarked that the social story intervention was a naturally occurring activity that could be easily embedded into the normal school environment (Soenksen & Alper, 2006). Although it could easily be included in the classroom routine, the researcher of this study noted the participants started questioning why they needed to read the same story every day. It appeared the repetition of the Social Story affected participants' interest and concentration. In lieu of this observation, a variety of Social Stories that represented the same target behavior focus could be used to maintain the participant's interest level.

It is important to note several limitations to this study. First, the boundary between different cultures such as the Caucasian and Hispanic cultures is difficult to define. Culture is an abstract concept. Educators should have the appropriate cultural awareness of the students they teach. However, there is no exact standard that can be used to evaluate whether the culturally familiar components really matched the participant's diverse background.

Secondly, the participants' language proficiency in English and Spanish was a very important factor. The three participants had different lengths of time attending an English dominant classroom. The effectiveness of the culturally-based Social Story might have varied if the participants' English proficiency were different.

A third limitation involves the ability to generalize the study's results to other students with developmental delays and to other behaviors beyond this investigation. All of the participants in this study were able to understand the content of the social story and answer comprehension questions with 80% accuracy or higher. It is unclear if the social story intervention would be effective with children with moderate or severe cognitive disabilities.

These findings suggest the need for additional future research to explore the effectiveness of the social story intervention with cultural components. First, it would be valuable to eliminate the language element of the social story to examine the effectiveness of cultural-based illustrations and characters in the intervention of social story for CLD learners. Another area of research that is needed relates to the language proficiency of the participant. It would be important to examine how the culturally-based social story benefited CLD students who had attended longer and shorter periods of time in an English dominant classroom.

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